REMARKS

In response to the Office Communication of December 29, 2005, Applicants request re-examination and reconsideration of this application for patent pursuant to 35 U.S.C. 132 and 37 CFR 1.114.

Claim Status/Support for Amendments

Claim 39 has been amended. Claims 2-38 were cancelled in a previous response (filed on December 10, 2004). Claims 39-46 are withdrawn from consideration. It is understood that claims 39-46, drawn to the non-elected invention, will remain pending, albeit withdrawn from consideration on the merits at this time. If the examined claim of the Group I invention is deemed to be allowable, rejoinder of the remaining claims (39-46) in accordance with the decision in *In re Ochiai* is respectfully requested; since the remaining claims (39-46) are limited to the use of the biopolymer markers of claim 1 (the examined claim of the elected Group I invention).

Claim 1 is currently under examination. Claims 1 and 39-46 remain pending in the instant application.

No new matter has been added by the amendment to the specification made herein.

The paragraph at page 24 has been amended to correct a typographical error (luymph to lymph).

No new matter has been added by the amendment to claim 39 made herein.

Claim 39 was amended to provide proper antecedent basis for the term "biopolymer marker". The word "marker" was inadvertently deleted by typographical error.

Request for Rejoining of Claims

Considering that claims 39-46 are limited to the use of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3 a search of these claims would encompass these specific sequences. The instant application is related in claim format to several other applications, both pending and issued, of which serial number 09/846,352 is exemplary. In an effort to maintain equivalent scope in all of these applications, Applicants respectfully request that the Examiner consider rejoining claims 39-46 in the instant application, which are currently drawn to non-elected Groups, with claim 1 of the elected Group under the decision in *In re Ochiai* (MPEP 2116.01), upon the Examiner's determination that claim 1 of the elected invention is allowable and in light of the overlapping search. If the biopolymer markers of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3 are found to be novel, methods and kits limited to their use should also be found novel.

Declaration under 37 CFR 1.132

The Examiner entered the Response filed on December 1, 2005. However, in the Advisory Action mailed on December 29, 2005 the Examiner indicated that the request for reconsideration has been considered but does not place the application in condition for allowance because the data provided (drawings/figures) allegedly does not show clear differential expression of the claimed sequences (SEQ ID NOS:1-3). Thus, the Final Rejection has been maintained.

Applicants strongly disagree with the Examiner's determination and assert that the figures (Figures 1-5, as originally filed; Figures 1 and 4, as attached to the declaration filed herewith) do provide clear differential expression of the claimed sequences (SEQ ID NOS:1-3).

In order to illustrate this point, Applicants provide the attached Declaration (with two figures and a table) under 37 CFR 1.132. The figures (Figures 1 and 4) attached to the declaration were previously provided to the Examiner in an e-mail dated December 14, 2005; however these figures were never formally entered into the prosecution record.

The first figure attached to the declaration filed herewith is entitled "DEAE 1(Elution) Normal vs. Diabetes Type II" and represents Figure 1 as originally filed. This figure was produced

by scanning the original photograph of the gel. The claimed SEQ ID NOS:1 and 2 were obtained from samples analyzed in the gel shown in Figure 1.

At page 46, lines 8-11 of the instant specification as originally filed, SEQ ID NO:1 is identified as a fragment of the complement C3f precursor protein having a molecular weight of about 1212 daltons (1211.67 daltons). Figure 2, as originally filed, shows the characteristic mass spectral profile of SEQ ID NO:1 (see top left of figure for band number analyzed, D1(E)C3-2 and see top right of figure for molecular weight of the exemplified ion, 1211). Band 3-2, identified in lane 1 of the gel shown in Figure 1, is clearly labeled as containing complement C3f. Thus, it can be ascertained that the claimed SEQ ID NO:1 is a fragment of the complement C3f precursor protein weighing about 1212 daltons obtained from Band 3-2 of the gel as shown in Figure 1. Band 3-2 is immediately evident in all four normal samples (lanes 1-4, as read from the left, marked by circles) and clearly absent in all five diabetes Type II samples (lanes 5-9, marked by squares).

At page 46, lines 11-13 of the instant specification as originally filed, SEQ ID NO:2 is identified as a fragment of the complement C3 precursor protein having a molecular weight of about 2173 daltons (2172.99 daltons). Figure 3, as originally filed, shows the characteristic mass spectral profile of SEQ ID NO:2 (see

top left of figure for band number analyzed, D1(E)C3-2 and see bottom right of figure for molecular weight of the exemplified ion, 2173). Band 3-2, identified in lane 1 of the gel shown in Figure 1, is clearly labeled as containing complement component 3 precursor. Thus, it can be ascertained that the claimed SEQ ID NO:2 is a fragment of the complement C3 precursor protein weighing about 2173 daltons obtained from Band 3-2 of the gel as shown in Figure 1. Band 3-2 is immediately evident in all four normal samples (lanes 1-4, as read from the left, marked by circles) and clearly absent in all five diabetes Type II samples (lanes 5-9, marked by squares).

No new matter has been added; Figure 1, as attached to the declaration filed herewith, is simply a clearer copy of Figure 1 as originally filed and is provided to clarify the presence and differential expression of the claimed biopolymer markers (SEQ ID NOS:1 and 2). The gel shown in the figure does not represent new experimentation; the figure shows a clearer image of the original gel made at the time that the experiments described in the instant specification were first carried out.

The second figure attached to the declaration filed herewith is entitled "HiQ3 (scrub) Normal vs. Diabetes Type II" and represents Figure 4 as originally filed. This figure was also produced by scanning the original photograph of the gel. The

claimed SEQ ID NO: 3 was obtained from samples analyzed in the gel shown in Figure 4.

At page 46, lines 13-15 of the instant specification as originally filed, SEQ ID NO:3 is identified as a fragment of the complement C3 precursor protein having a molecular weight of about 1191 daltons (1190.6210 daltons). Figure 5, as originally filed, shows the characteristic mass spectral profile of SEQ ID NO:3 (see top left of figure for band number analyzed, Q (SCRUB)S2 and see top right of figure for molecular weight of the exemplified ion, 1190.60). Band 2, identified in lane 10 of the gel shown in Figure 4, is clearly labeled as containing complement component 3 precursor. Thus, it can be ascertained that the claimed SEQ ID NO:3 is a fragment of the complement C3 precursor protein weighing about 1191 daltons obtained from Band 2 of the gel as shown in Figure 4. Band 2 is immediately evident in all four normal samples (lanes 7-10, as read from the left) and clearly absent in all five diabetes Type II samples (lanes 2-6).

No new matter has been added; Figure 4, as attached to the declaration filed herewith, is simply a clearer copy of Figure 4 as originally filed and is provided to clarify the presence and differential expression of one of the claimed biopolymer markers (SEQ ID NO:3). The gel shown in the figure does not represent new experimentation; the figure shows a clearer image of the original

gel made at the time that the experiments described in the instant specification were first carried out.

The table attached to the declaration filed herewith is a partial listing of markers identified by the instant inventors; including the currently claimed markers, SEQ ID NOS:1-3 (see experiments 9, 10 and 17; marked by *). Each peptide marker in the table is described using five main categories. For example, one of the currently claimed markers, SEQ ID NO:2, was obtained from Band 3 of the gel using DEAE 1 Elution chromatography as the preparatory step to mass spectrometric analysis, identified during experiment 17 as a fragment of complement C3 precursor weighing about 2172 daltons and was found to be present in normal samples during comparison of normal samples versus Type II diabetes samples. It is noted that instantly claimed SEQ ID NO:1 was also identified in Band 5 of the gel shown in Figure 4. No new matter has been added by the disclosure of the table. The data summarized in the table does not represent new experimentation; the table shows the data which was collected at the time that the experiments described in the instant specification were first carried out.

Accordingly, it is established that the figures(Figures 1-5, as originally filed and Figures 1 and 4, as attached to the declaration filed herewith) show that the claimed peptides (SEQ ID NOS:1-3) are present in samples obtained from patients

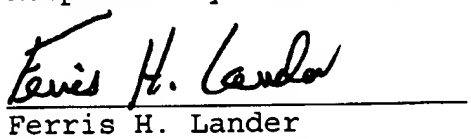
determined to be normal with regard to Type II diabetes and absent from samples obtained from Type II diabetes patients. Thus, contrary to the Examiner's determination, the figures do show differential expression of the claimed sequences (SEQ ID NOS:1-3).

Accordingly, Applicants respectfully request that the Final Rejection now be withdrawn.

CONCLUSION

In light of the foregoing remarks, amendment to the specification and amendment to the claims, it is respectfully submitted that the Examiner will now find the claims of the application allowable. Favorable reconsideration of the application is courteously requested.

Respectfully submitted,



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amdt entered
L/Cook 3/2/06
Draft.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Ferris H. Lander (Reg. No. 43,377) and Katharine Davis (Reg. No. 51,598) on 3/1/06.

I. In claim 1 after "SEQ ID NO:1", replace "," with ----or----.

II. In claim 1 after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

III. In claim 39 line 2, after "determining" insert ----in a patient sample,----.

IV. In claim 39 line 3, after "SEQ ID NO:1", replace "," with ----or----.

V. In claim 39 line 3 after "SEQ ID NO:3" insert ----which is linked to Type II diabetes----.

VI. In claim 39 line 3, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

VII. In claim 39 line 9, after "SEQ ID NO:1", replace "," with ----or----.

VIII. In claim 39 line 10, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

IX. In claim 39 line 13, after "SEQ ID NO:1", replace "," with ----or----.

X. In claim 39 line 13, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

XI. In claim 39 line 15, after "SEQ ID NO:1", replace "," with ----or----.

XII. In claim 39 line 16, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

XIII. In claim 39 line 18, after "SEQ ID NO:1", replace "," with ----or----.

XIV. In claim 39 line 18, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

XV. In claim 44 line 2, after "SEQ ID NO:1", replace "," with ----or----.

XVI. In claim 44 line 3, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

XVII. In claim 44 line 4, after "SEQ ID NO:1", replace "," with ----or----.

XVIII. In claim 44 line 4, after "SEQ ID NO:2", delete [or consisting of SEQ ID NO:3].

3. **NO EXTENSIONS OF TIME ARE PERMITTED TO FILE CORRECTED OR FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION**, notwithstanding any indication to the contrary in the attached Notice of Allowability (PTO-37).

If the following language appears on the attached Notice of Allowability, the portion lined through below is of no force and effect and is to be ignored[1]:

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to comply will result in ABANDONMENT of this application. ~~Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).~~

Similar language appearing in any attachments to the Notice of Allowability, such as in an Examiner's Amendment/Comment or in a Notice of Draftsperson's Patent Drawing Review, PTO-948, is also to be ignored.

[1] The language which is crossed out is contrary to amended 37 CFR 1.85(c) and 1.136. See *"Changes to Implement the Patent Business Goals"*, 65 *Fed. Reg.* 54603, 54629, 54641, 54670, 54674 (September 8, 2000), 1238 *Off. Gaz. Pat. Office* 77, 99, 110, 135, 139 (September 19, 2000).

4. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO fax center located in Crystal Mall 1. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 1641 Fax number is (571) 273-8300, which is able to receive transmissions 24 hours/day, 7 days/week.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa V. Cook whose telephone number is (571) 272-0816. The examiner can normally be reached on Monday - Friday from 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, can be reached on (571) 272-0823.

Any inquiry of a general nature or relating to the status of this application should be directed to Group TC 1600 whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see httpr//pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 2, 2006

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (previously presented) An isolated biopolymer marker consisting of SEQ ID NO:1 OR consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~.

Claims 2-38. (cancelled)

Claim 2 ~~39~~. (withdrawn-currently amended) A method for determining (in a patient sample) the presence of a biopolymer marker consisting of SEQ ID NO:1 OR consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ (which is linked to Type II diabetes.) comprising:

(a) obtaining a sample from a patient;

(b) conducting mass spectrometric analysis on said sample in a manner effective to maximize analysis of peptide fragments contained therein and comparing mass spectrum profiles of said biopolymer marker consisting of SEQ ID NO:1 OR consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ to mass spectrum profiles of

peptides obtained and analyzed from said sample; and

(c) confirming the presence of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ in said sample displaying a peak profile of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ in said mass spectrum profile ;

wherein the presence of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ is indicative of a link to Type II diabetes.

Claim 40. (withdrawn) The method of claim 39, wherein said sample is an unfractionated body fluid or a tissue sample.

Claim 41. (withdrawn) The method fo claim 39, wherein said sample is selected from the group consisting of blood, blood products, urine, saliva, cerebrospinal fluid, and lymph.

Claim 42. (withdrawn) The method of claim 39, wherein said mass spectrometric analysis is selected from the group consisting of Surface Enhanced Laser Desorption Ionization (SELDI) mass spectrometry (MS), Maldi Qq TOF, MS/MS, TOF-TOF, ESI-Q-TOF and ION-TRAP.

Claim 43. (withdrawn) The method of claim 39, wherein said patient is a human.

Claim 44. (withdrawn) A kit for determining the presence of a biopolymer marker consisting of SEQ ID NO:1 consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ comprising: (a) a peptide consisting of SEQ ID NO:1 consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ and (b) an antibody that binds to said peptide in a sample from a patient.

Claim 45. (withdrawn) The kit of claim 44, wherein said antibody is immobilized on a solid support.

Claim 46. (withdrawn) The kit of claim 44, wherein said antibody is labeled.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (previously presented) An isolated biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~.

Claims 2-38. (cancelled)

Claim 39. (withdrawn-currently amended) A method for determining the presence of a biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ comprising:

(a) obtaining a sample from a patient;

(b) conducting mass spectrometric analysis on said sample in a manner effective to maximize analysis of peptide fragments contained therein and comparing mass spectrum profiles of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ to mass spectrum profiles of

peptides obtained and analyzed from said sample; and

(c) confirming the presence of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ in said sample displaying a peak profile of said biopolymer marker consisting of SEQ ID NO:1, consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:3~~ in said mass spectrum profile ;

wherein the presence of said biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO~~:3 is indicative of a link to Type II diabetes.

Claim 40. (withdrawn) The method of claim 39, wherein said sample is an unfractionated body fluid or a tissue sample.

Claim 41. (withdrawn) The method fo claim 39, wherein said sample is selected from the group consisting of blood, blood products, urine, saliva, cerebrospinal fluid, and lymph.

Claim 42. (withdrawn) The method of claim 39, wherein said mass spectrometric analysis is selected from the group consisting of Surface Enhanced Laser Desorption Ionization (SELDI) mass spectrometry (MS), Maldi Qq TOF, MS/MS, TOF-TOF, ESI-Q-TOF and ION-TRAP.

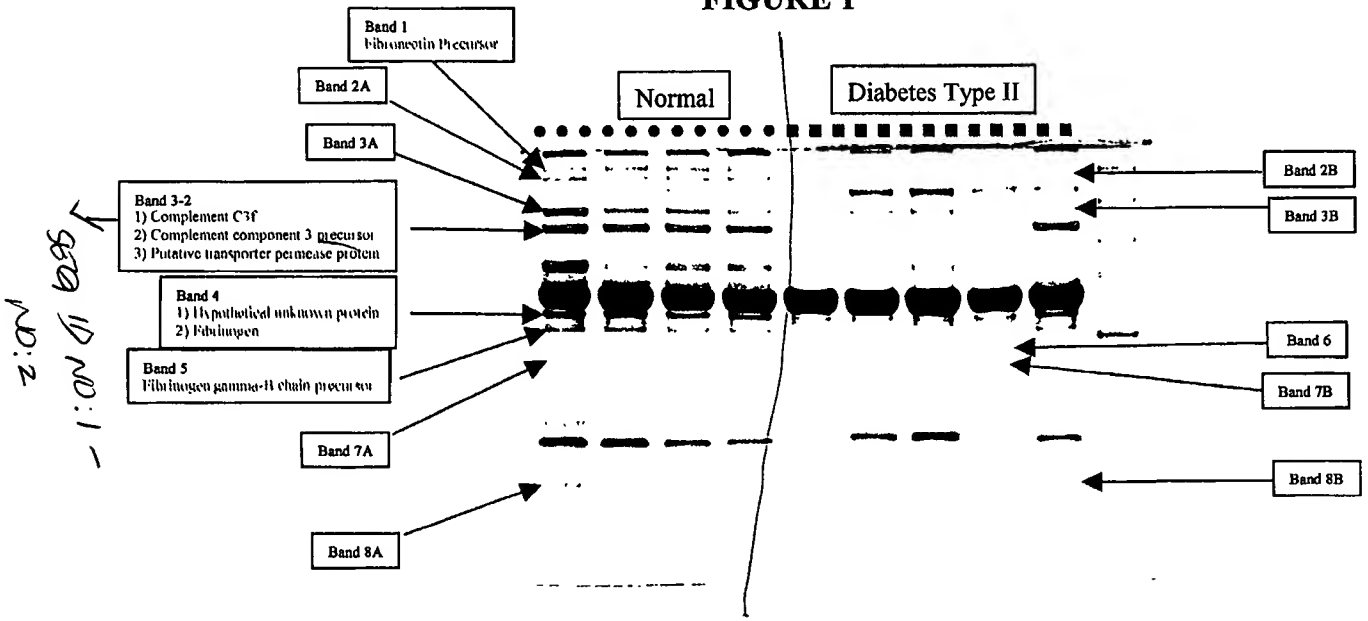
Claim 43. (withdrawn) The method of claim 39, wherein said patient is a human.

Claim 44. (withdrawn) A kit for determining the presence of a biopolymer marker consisting of SEQ ID NO:1 or consisting of SEQ ID NO:2 ~~or consisting of SEQ ID NO:~~3 comprising: (a) a peptide consisting of SEQ ID NO:1, consisting of SEQ ID NO:2 or consisting of SEQ ID NO:3 and (b) an antibody that binds to said peptide in a sample from a patient.

Claim 45. (withdrawn) The kit of claim 44, wherein said antibody is immobilized on a solid support.

Claim 46. (withdrawn) The kit of claim 44, wherein said antibody is labeled.

DEAE 1(Elution) Normal vs. Diabetes Type II
FIGURE 1



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Katharine Doris
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FIGURE 2

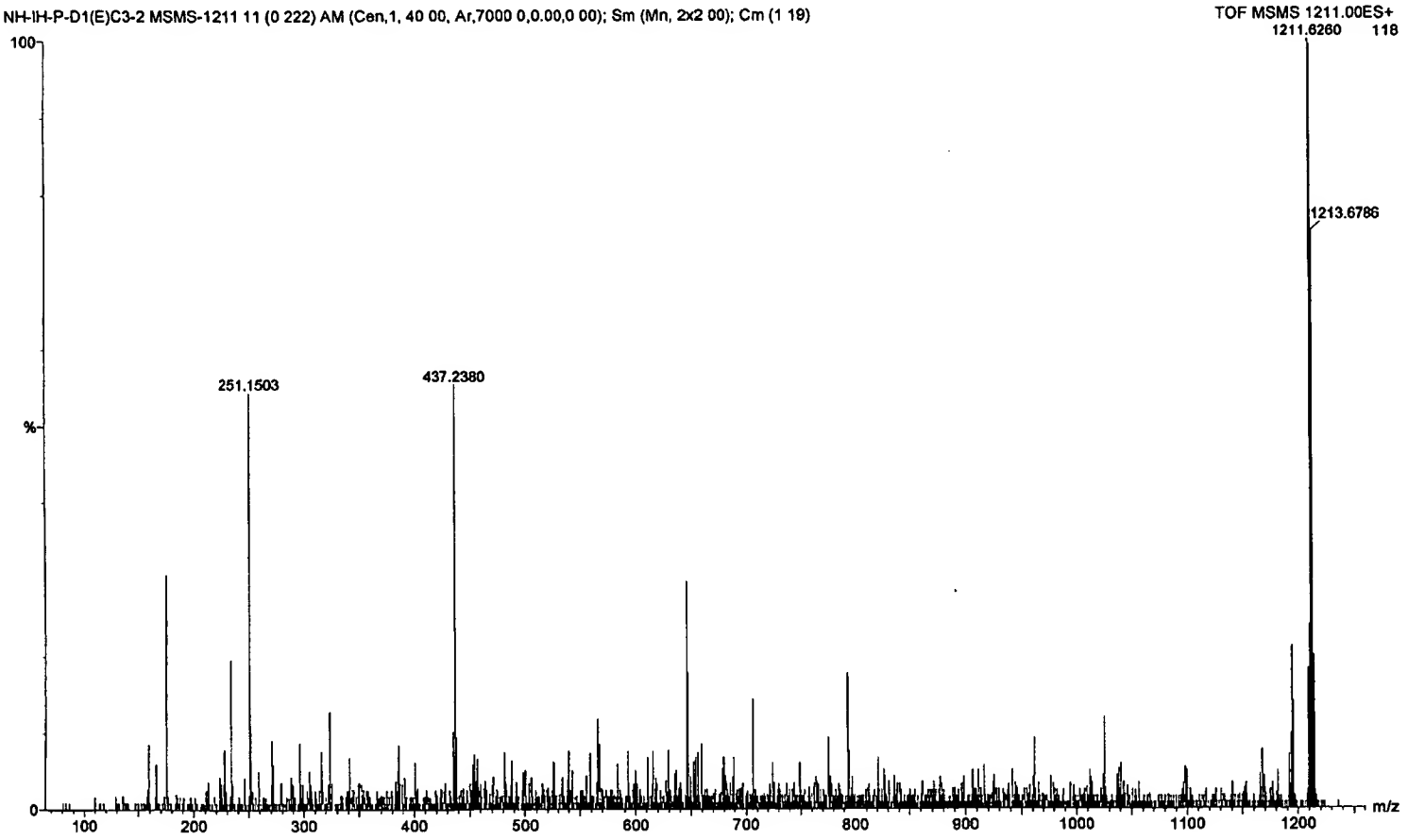
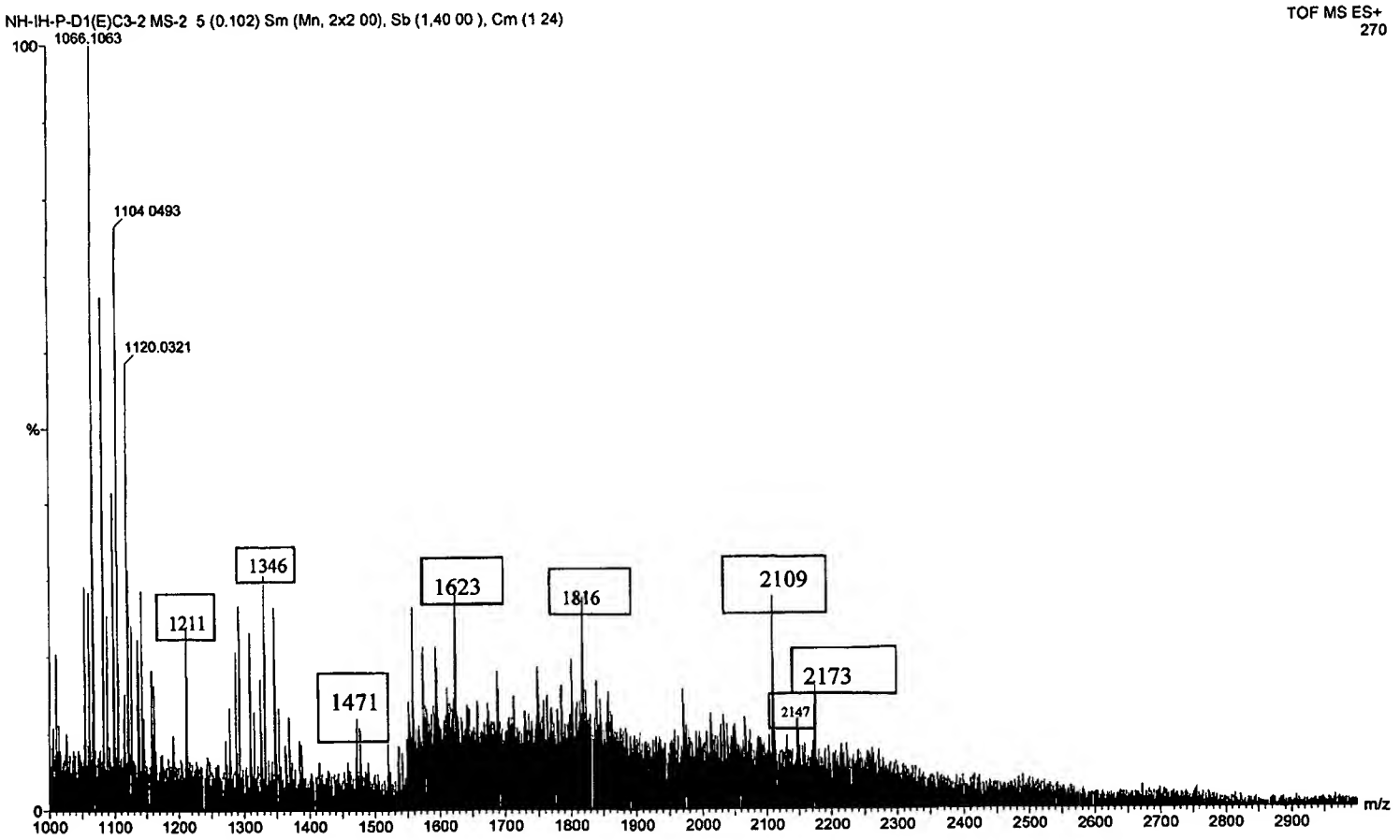


FIGURE 3



HiQ3 (scrub) Normal vs. Diabetes Type II

FIGURE 4

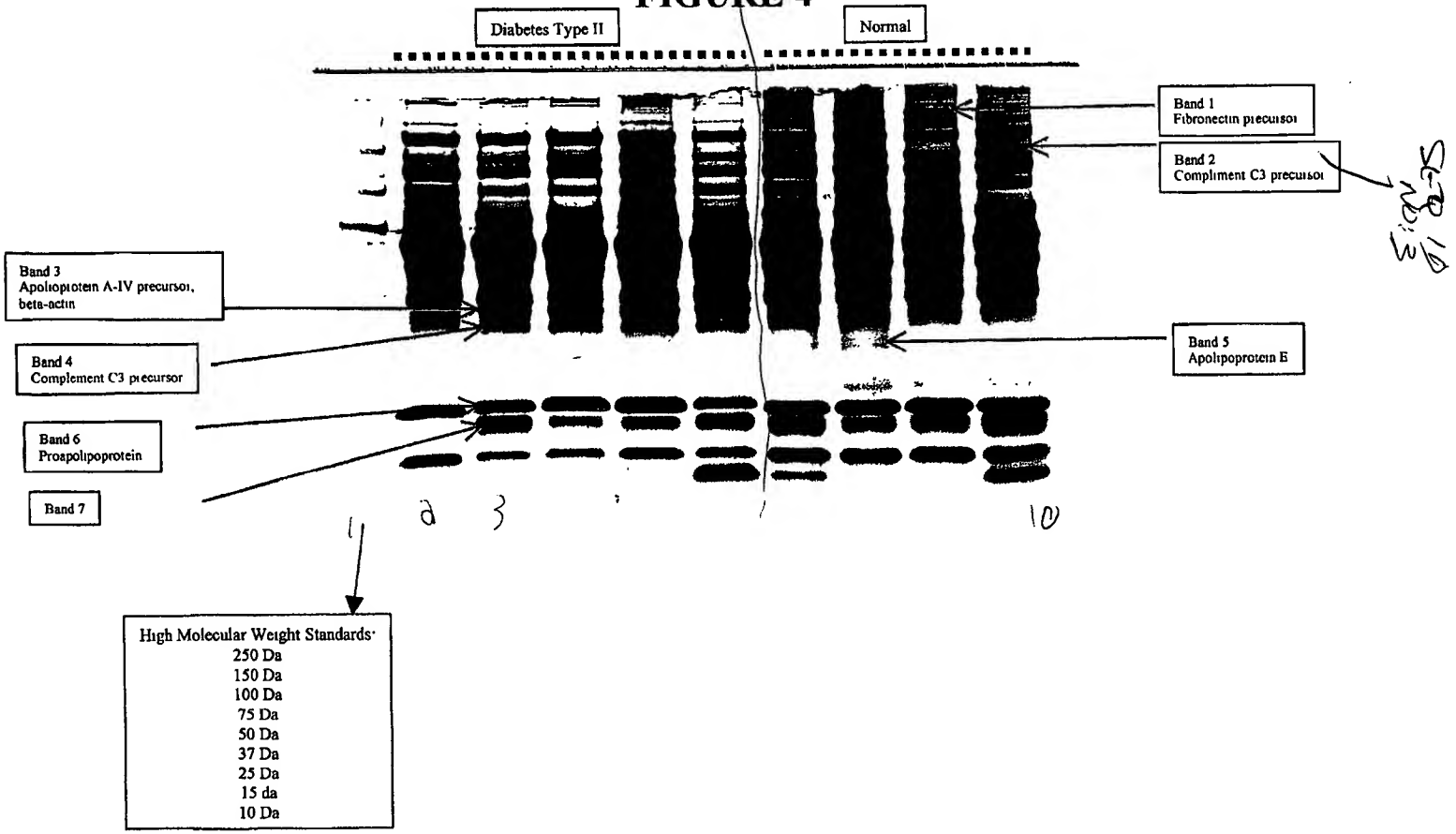
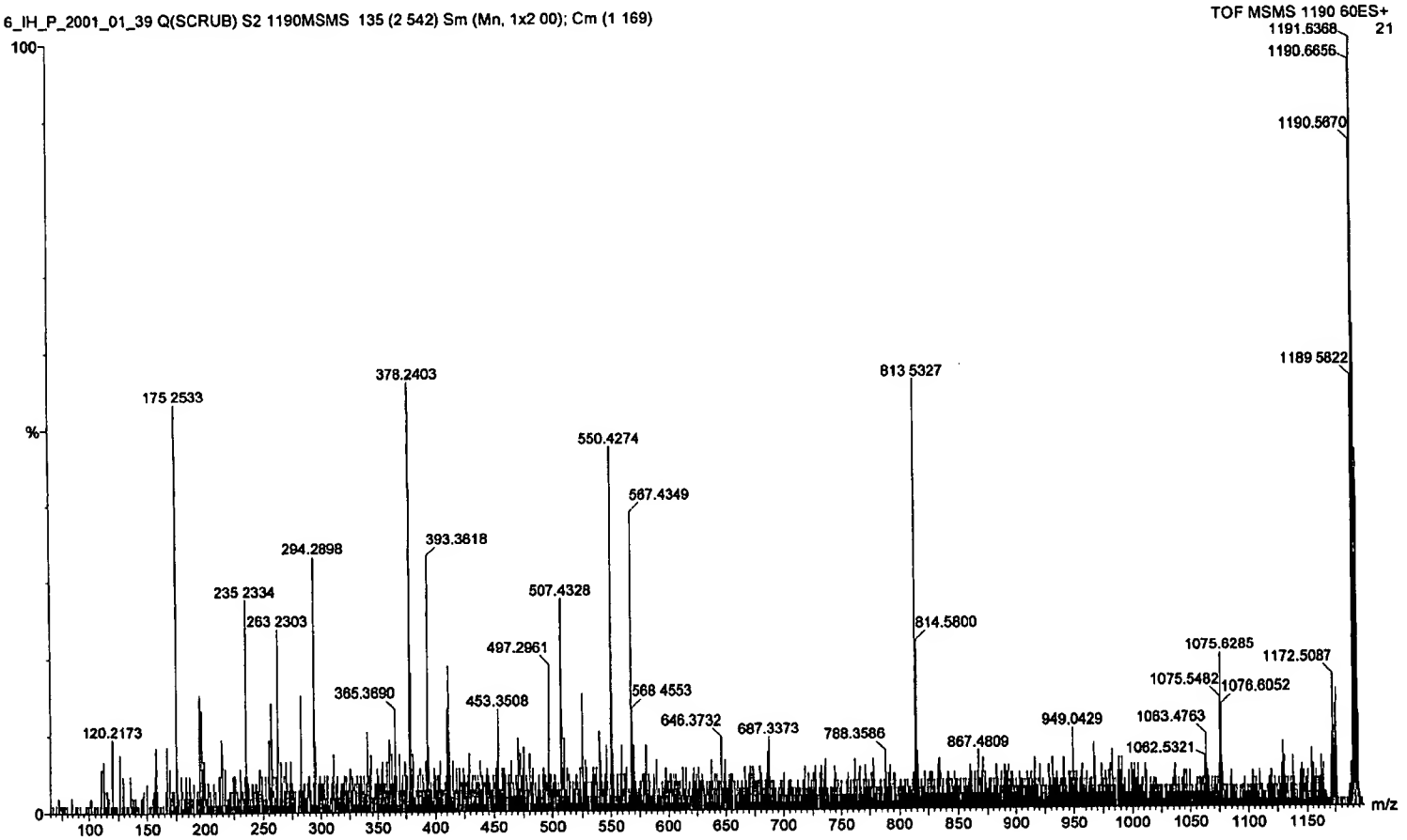
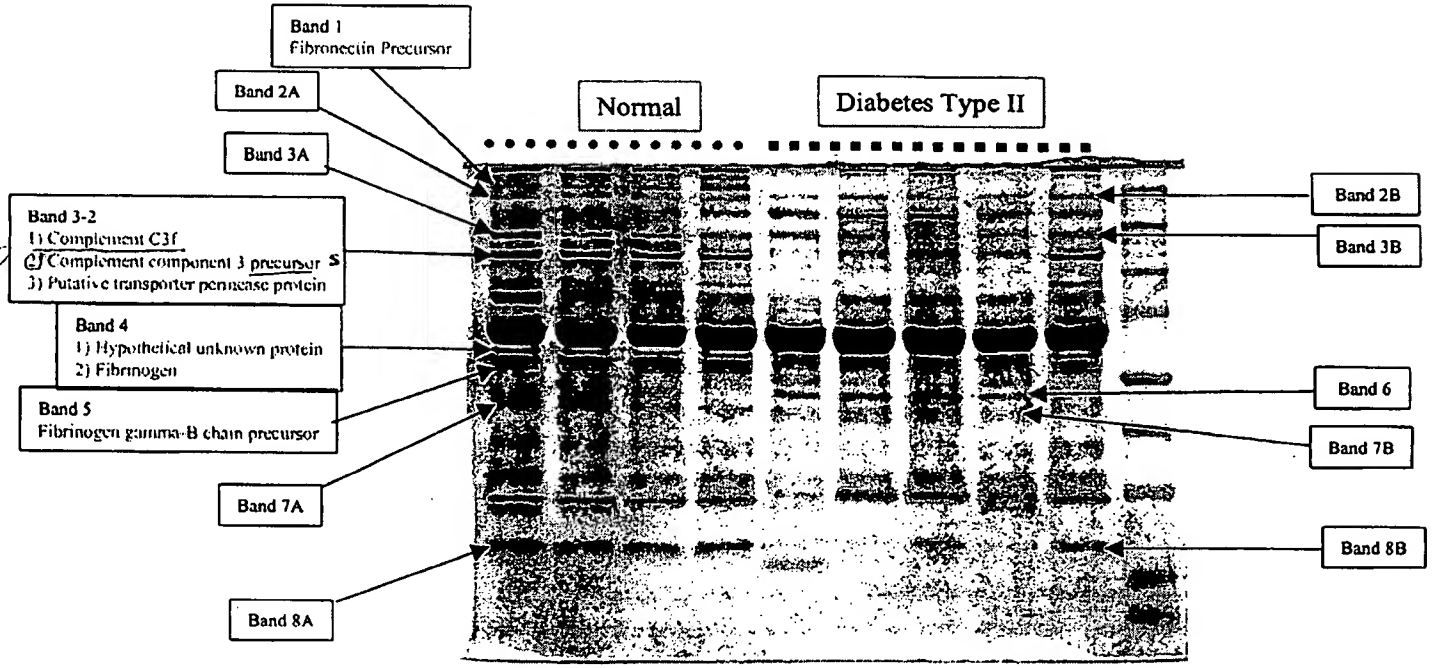


FIGURE 5



DEAE 1(Elution) Normal vs. Diabetes Type II



SEQ ID NO: 1 and SEQ ID NO: 2

Figure 1

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HiQ3 (scrub) Normal vs. Diabetes Type II

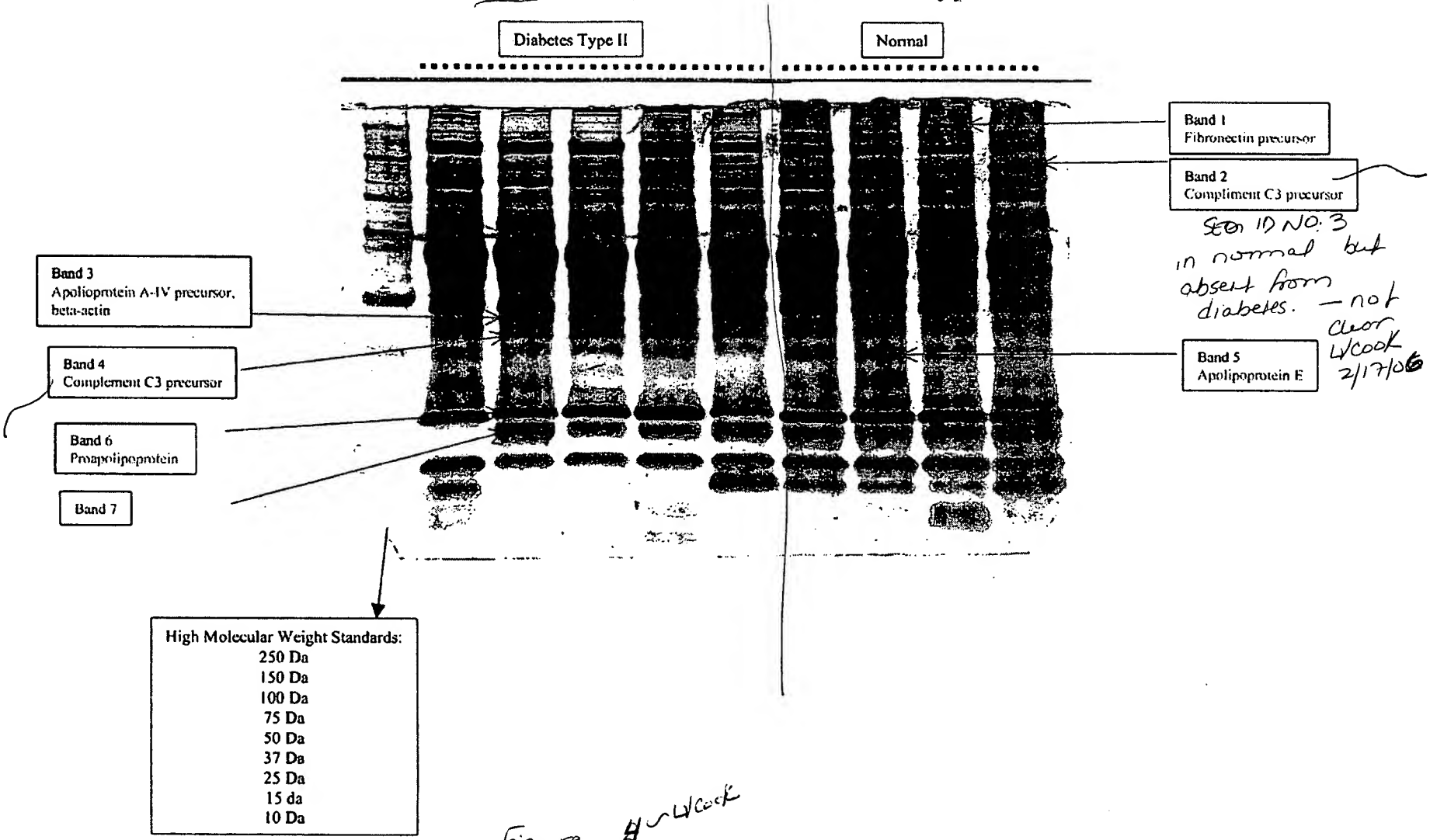

Figure 4 - LVcook

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